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The Orchadian

Official Journal of the Australasian Native Orchid Society Inc.

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Dendrobium kingianum 'Peon Splash' AM/ANOS, AM/AOC 2021. Photo P. Adams

The Orchadian

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Editorial

The Orchadian has been progressively upgraded in content and quality since December 2015. There has been a small but steady increase in new subscribers, slowed by the Covid 19 pandemic. Many similar periodicals have experienced a considerable decline in recent years associated with the trend to online information and other societal changes. There has been an increase in the number of new contributors, some who have taken up membership, and some very positive feedback, particularly from overseas subscribers, who find the articles useful for judge training.

Sheryl Lawson has been appointed Assistant Editor of *The Orchadian* by ANOS Council, which is appropriate and overdue, as she has acted in that capacity for the past six years. I thank her for a major contribution to the content and standard of the journal

Although printing costs have not risen substantially, postage costs have increased, and the overall costs must be balanced against membership numbers. Since its inception in 1963, a three-monthly hard copy journal has been produced, yet society is changing rapidly with a strong move to online activity and contraction of participation in orchid and other plant groups. All past editors of the journal have commented on the limited contributions from members and regularly appealed for submissions with limited success. Most of the content is provided by members of ANOS Council and a wider group of writers, some of whom are not members. The challenge of producing 48 high-quality pages every three months with low membership contributions is not sustainable.

In this light, the new Council intends to review all aspects of the production of *The Orchadian*. The ideal option is to continue the present arrangements but with a much better level of

contributions. This is becoming less likely as the supply of material for publication is declining and has been a major problem for years. Other alternatives are to reduce the frequency of the issues, move to larger issues twice a year, or produce an exclusively online version that would reduce costs considerably, but involve the same amount of work and disadvantage people who do not have online access. This latter alternative is not an attractive option.

In this issue, there is a strong focus on articles about breeding and growing Australian orchids in collections, and with low content submitted, the editorial staff have had to contribute more than is ideal. Many members with orchid collections could similarly write about their observations, successes and failures and the highlights of good seasons. I hear that readers want to see more articles of this type and hope you will consider submitting your own experience of the past season for the March issue. My highlights for 2021 came from a below-average flowering season and some were entirely unexpected. The accounts of the non-classic *Sarcochilus* Maud, a *Sarcochilus australis*-dominated hybrid, and of flared labellum forms of linebred *Dendrobium kingianum* come from observations in a collection.

Leo Davis describes some exciting remnant orchid populations in the dry inhospitable Mallee of South Australia and makes a plea for their conservation. Carole Barnett and Gerry Smee record a superb virtual show in New South Wales in September 2021, where some outstanding plants were submitted.

I am looking forward to a resumption of normal ANOS activities in 2022, and an influx of member contributions to ensure that the next issues of the journal are well-filled.

Peter Adams

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Current contact details can be found at **anos.org.au** or in the individual group website.

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President's Report

The 2021 annual general meeting of the Australasian Native Orchid Society Inc. was held via a Zoom meeting on 29 November 2021. An in-person 2021 AGM scheduled for 22 August 2021 in southeast Queensland had to be cancelled due to a snap COVID-19 lockdown. The AGM was attended by 35 members from New South Wales, Queensland, Tasmania, Victoria and Western Australia. The feedback from two of the Western Australian members was that a Zoom meeting allowed them to participate whereas an in-person meeting on the east coast would not.

The meeting was able to be held via Zoom due to the relaxations of the requirements for AGMs by New South Wales Fair Trading because of the COVID-19 virus pandemic. Our current constitution (amended 6 September 2014) does not normally allow for AGMs to be conducted using technology but does allow for council and sub-committee meetings to be held at two or more venues using any technology that gives each of the council and/or sub-committee members a reasonable opportunity to participate. Changing our constitution to allow future AGMs to use digital technology would give all voting members a reasonable opportunity to participate, and may be worthy of consideration.

The newly elected council has a number of changes. Sheryl Lawson retired from council at the 2021 AGM. Sheryl has served continuously on council for more than 10 years as a councillor, Vice President, President from the 2016 AGM to the 2019 AGM, then Immediate Past President. Barry Dudman (Tasmania) and Malcolm McGowan (Victoria) have also retired from council. Barry has served as a councillor since the 2016 AGM. Malcolm first became a councillor at the 2013 AGM and also served as Webmaster since the 2016 AGM.

I thank all the retiring members for their service to ANOS Inc.

Peter Adams served as President from the 2019 AGM while also Editor of *The Orchadian*, and continues as Immediate Past President. Geoff Curry (Tasmania) retired as Conservation Officer but remains as a Councillor. Warren Wilcox was Vice-President from the 2019 AGM and remains as a Councillor. Callyn Farrell has been a Councillor from the 2016 AGM and is now elected Vice-President.

The council welcomes four new elected members. Tracey Hinton (Victoria) is the new Conservation Officer. Harry Ashton (Western Australia), Carole Barnett (New South Wales) and Alan Geddes (Tasmania) have been elected as Councillors. Carole has also agreed to be Webmaster.

The 2021 AGM received reports from ANOS Macarthur Group (New South Wales), ANOS Warringah Group (New South Wales), ANOS Western Australia and ANOS Central Coast Group (New South Wales). Most of these groups were looking forward to a more normal 2022 when the holding of monthly meetings and shows was not curtailed by COVID-19 restrictions. ANOS Western Australia reported that it had not been that greatly impacted by COVID-19 restrictions. All were going okay and looking forward to 2022.

A November 2021 newsletter has been circulated to members who have provided an email address, and to newsletter subscribers. The newsletter circulation is now over 650 people from Australia and overseas. We plan for the newsletter to be circulated at a more regular frequency. If groups have items or news they wish advertised in an upcoming newsletter, please email the information to info@anos.org.au.

I wish all members a Merry Christmas and Happy New Year.

David James

A Treasure in the South Australian Mallee

Text and Photos Leo Davis | leordavis@adam.com.au

Summary

About 25 orchid species were located in remnant scrub in the Murray Mallee at Sherlock, about 30 km southeast of Tailem Bend, South Australia. The area is dry, with *Eucalyptus* and *Callitris* species, and the porcupine grass *Triodia scariosa*.

Introduction

Land varies in its suitability for cropping, pastoral and other uses and some locations are more sought after than others. Factors contributing to the desirability include the amount, regularity and dependability of rainfall and the presence of other water sources. Other considerations include temperature range, aspect, humidity and the strength and frequency of winds. The quality of the soil including depth, nutrient availability, drainage, pH and more is also important. Over time, most of the desirable land in South Australia has been put to economic use. Places unsuitable for development may end up as conservation parks or similar reserves.

Very occasionally a piece of desirable land is preserved as an unintended chance by-product of human activity. Land beside railway lines, either in use or abandoned, is an example. Ribbons of remnant vegetation beside roads through otherwise desirable land are another example. These isolated, narrow strips are useful for a limited range of species.

Bush or scrub patches and woodland around a water reserve or cemetery are also valuable sites. At Lobethal, northeast of Adelaide, a reservoir no longer used for supplying town water has woodland with a wide range of species on land that in other circumstances would have been cleared for agriculture or horticulture. On southwest Yorke Peninsula the cemetery at Brentwood has one of the few populations of the critically endangered South Australian endemic *Caladenia intuta* (D.L.Jones) R.J.Bates (ghost spider orchid), the only site not on private property.

Orchid species are not usually well represented in roadside vegetation. Many orchid species are dependent upon mycorrhizal fungi, at least during the germination process, and may not thrive on the windswept roadsides with fertilizer and herbicide residues from adjacent farmlands. Many orchids are dependent upon a single insect pollinator species. This may mean that orchid species need a greater area and variety of intact habitats.

Observations

In October 2005, I chanced upon an example of fortuitous preservation in the Murray Mallee at Sherlock, about 30 km southeast of Tailem Bend. In the disused Railway Reserve are the remnants of the railway platform, from which, 50 years ago, my farmer friend helped his family load mallee roots onto railway wagons, contributing to further land clearance. North of the railway line is a stretch of mallee scrub (*Eucalyptus* and *Callitris* spp.), some being regrowth, covering around 750 x 75 m. There I was dumbfounded to find 12 species of orchids in flower and several more in fruit. I have visited the site several times each year since then and the orchid species count is now up to 22 and rising.

From 2014 I explored the area more fully, finding further extensive scrubland north of the railway and, across the highway, to the south in Sherlock town. I realised I'd stumbled upon another example of chance land preservation. In August 1907 the

Triodia scariosa - with time it forms ring structures.

Triodia scariosa - assists in forming orchid habitat.

townsite of 15 hectares was proclaimed (South Australian Government Gazette) with 80 blocks having designated Park Lands to the north of the Railway Station Reserve. The town is bordered by East, South and West Terraces which exist only on paper. A Baptist Church was opened in 1911, the first stone building along the Pinnaroo rail line, one street south of the other border, Railway Terrace (now the Mallee Highway). The railway station opened in 1913. The one-room primary school closed in 1970 and the Council Chambers closed in 1997.

The history might suggest a onetime thriving township, but even at it its busiest there were only buildings along the centre stretch of Railway Terrace and a couple in the parallel Kelly Street to the south, on the northern edge of the surveyed town. Today there are about 10 residences, a church, an empty school and a hall. This site is also rich in orchids, having some species not yet found across the road in the Railway Reserve and parklands.

This is the type location for *Pterostylis prasina* (D.L.Jones) G.N.Backh. (glossy or limestone banded greenhood). A single specimen of the endangered *Caladenia colorata* D.L.Jones (mallee white spider-orchid) has been located and caged, and it is hoped more may be found. There are at least four other species of spider orchids, including the recently described *C. campestris* (R.J.Bates) R.J.Bates (plains spider orchid). There is a sizeable population of a leek orchid, which may be *Prasophyllum odoratum* R.S.Rogers (scented leek orchid) but possibly an undescribed species.

Identifying sun orchids is difficult because visits must be made on an appropriately sunny and/or warm and humid day to observe open flowers. So far a single specimen of *Thelymitra azurea* R.S.Rogers (azure sun orchid) has been located and a handful of other sun orchid species are well represented. A remarkable patch of about 300 specimens of the nationally rare *Pterostylis multisignatus* (D.L.Jones) D.L.Jones (mallee

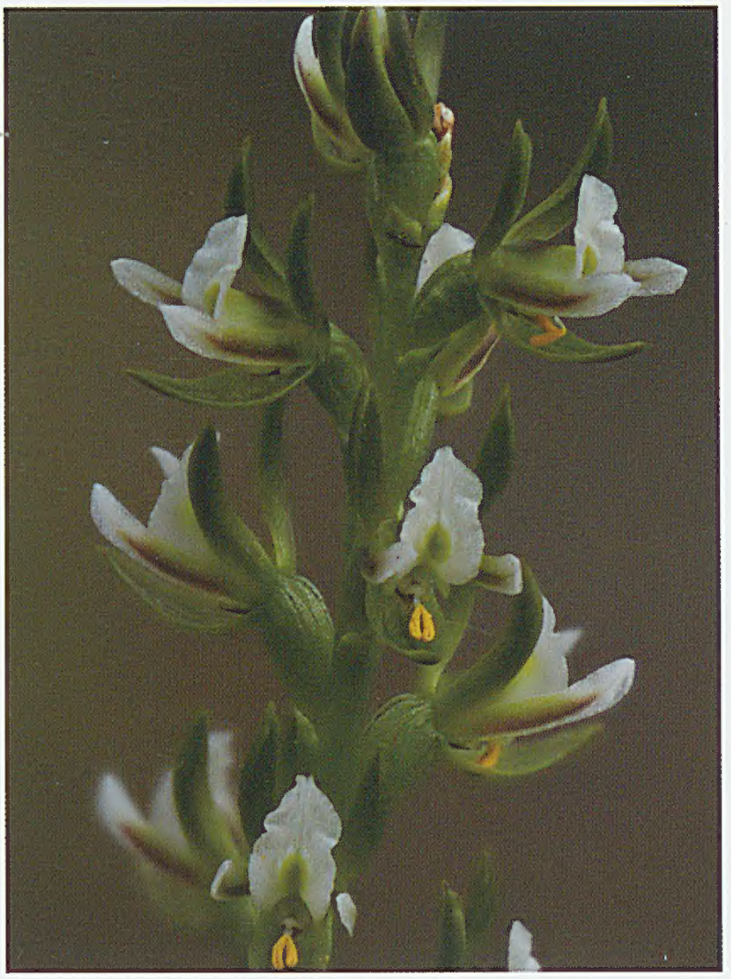
Actinobole uliginosum

Blennospora drummondii

Hyalosperma demissum

Isoetopsis graminifolia

Diuris calcicola



Prasophyllum odoratum

bearded greenhood) is slowly spreading, and flowers regularly.

This patch of relatively intact vegetation is significant for much more than orchids. Rings of *Triodia scariosa* N.T.Burb. (porcupine grass) 5 m across give some indication of how long the site has remained largely undisturbed. The soil type and associated vegetation vary across the sites and while not especially good, it is surrounded by crops and, had it not been set aside as a township, would have been cleared.

Given that close to 25 species of Orchidaceae had been found, so far, across the three linked locations (Parklands, Railway Reserve, Township) on either side of the highway, it seemed that a similar range in other plant families might be found. Clive and Claire Chesson were asked to inspect the sites on 17 September 2018. Clive brought a list accessed from Atlas of Living Australia that predicted 90 species might be found within a kilometre of the town. During our relatively short visit, he found 62 of the listed species and a further 49 species that were not on the list. This was in the middle of a very low rainfall period, and more species may be found in better seasons.

The non-orchid species in the plot are not particularly rare according to Clive, though he told me that while there he'd found species and forms that he had read about but not seen. The significant factor is that these species can all be found in one area of bushland when in many reserves only some are represented. The diversity of plant species is likely to increase the chance that pollinators for the orchids are present and persist.

Breaking the natural landscape into developed land and remnant patches of natural vegetation has led to fragmentation of the natural assemblages of species. Anything close to complete ecosystems can be hard to find especially in the largely clear-felled areas of the agricultural zone. This location may be the most intact piece of remnant vegetation in this part of the Murray Mallee (Clive Chesson, pers. comm.). The bushland areas of

Caladenia colorata

Pterostylis multisignata

Pterostyis biseta

Thelymitra X macmillanii

Cyrtostylis robusta

Caladenia cardiochila

Caladenia verrucosa

Thelymitra alcockiae

Thelymitra antennifera

Caladenia campestris

Caldenia capillata

Sherlock, though not pristine in a strict botanical or ecological sense, have revealed an amazingly intact diversity of understorey plants. Members of the daisy and orchid families are particularly well-represented. There is an assemblage of plant species that should be preserved because of its uniqueness and representation of plant diversity in a dry environment.

The long-term prospects for the site are unknown and it is possible that the local government could dispose of it. Currently, it is relatively free of weeds, and the dumping of household rubbish, once common, has reduced considerably since regular garbage collection has been provided. I consider that the site warrants formal recognition of its value and significance.

References

South Australian Government Gazette. Aug 8, 1907, No.32.

Leo Davis is a retired teacher who has devoted much of 15 years in retirement to studying, conducting censuses, caging and seed collection of threatened South Australian orchid species.

Sarcochilus Maud – Analysis of a Hybrid

Text by Sheryl Lawson Photos by Peter Adams | sheryldlawson@gmail.com

Summary

The growing and flowering results of a group of seedlings of the hybrid *Sarcochilus* Maud (*S.* Olive Nymph x *S.* Cherie) are presented with reference to the influence of the parent species, in particular *S. australis,* in the variable progeny. The results of using different parents are compared and show significant differences, with plants from the cross of *S.* Olive Nymph 'Pale Green' and *S.* Cherie 'TE' having the best growth and superior flower quality.

Introduction

Hybridists are generally curious, patient and hopeful people, prepared to invest considerable time and effort in choosing and pollinating flowers during the season, waiting for pods to form, sending them off for flasking, then carefully nurturing the seedlings to flowering stage, or in many cases passing them on to others, which means that they rarely see the full results of their efforts.

We keep all our seedlings to flowering and have found this a rewarding journey. The full results of making a new hybrid inform about the influence each of the background species have on the range of seedlings produced compared to the theoretical contribution. Progeny can vary widely in complex hybrids due to the process of genetic recombination. Keeping all the seedlings and growing them to maturity is a fascinating process, with seedlings showing varying degrees of vigour in their growth and their time to flowering. The weaker seedlings can die along this journey, leaving the healthiest and strongest ones to flourish. Occasionally a slow-growing seedling will produce an outstanding flower, but if you have limited growing space, there may not be sufficient space for this lengthier process, and many people discard the weak or slow-growing plants. We have received quality awards for several *Dendrobium* hybrids that were originally the runt of the litter but grew well once established and later were found to have exceptional flower quality.

Sarcochilus australis

Sarcochilus australis (Lindl.) Reichb.f. (butterfly orchid or Gunn's orchid) was first described in 1863. It is a small species, often called a twig epiphyte because it commonly grows on small outer branches of several species of rainforest trees in humid conditions, usually near a creek or other water source. The plants have a high turnover, with the small branches dying and falling to the ground with the orchids still attached, where they desiccate or are grazed. Small seedlings are locally common, and their velum-covered roots can extend over a metre from the plant along the branches, making them easier to find. The species also grows on the host tree trunks, and it is here that the largest plants can usually be found. The distribution is from northern Tasmanian creeks to northern New South Wales near the Queensland border. It is more often close to the coast, but some struggling populations have been reported further west in New South Wales. The distribution in all areas is threatened by repeated severe bushfires and urban development which destroy their habitat. They are hard to maintain in cultivation due to the very specific cultural requirements of coolness and high humidity.

The large white jutting labellum is a feature of the small flowers and can be an outstanding feature when trying to find them flowering in their habitat.

Sarcochilus Maud #10

Sarcochilus Cherie

Sarcochilus Olive Nymph 'BS'

Sarcochilus Olive Nymph 'BS'

Flowers range in colour from pure green to yellow-green, rose and brown. Flower count can be up to 16 flowers per raceme, racemes are pendulous and often vertical.

Sarcochilus australis Hybrids

The positive features of these hybrids are an interesting and different style of plant and flowers, high floriferousness, a large number of inflorescences on a lead, all flowers presenting to the viewer, large colourful labellum and a potential variety of colours. These characteristics far outweigh the small number of potential negative features in using *S. australis* as a parent. Flowers of the subsequent hybrids can sometimes be irregularly spaced on the raceme, and occasionally flowers do not necessarily open successively in order from the base of the raceme. The hooded dorsal sepal and placement of the petals can be unattractive if excessive. Because the species is notoriously difficult to maintain in cultivation for more than a year or two, hybrids with a dominance of *S. australis* require high humidity and may do better on mounts than in pots.

One of the goals of making this hybrid was to see how much *S. australis* would influence the outcome of a hybrid that also had the three larger-flowering *Sarcochilus* species in the background. This exploration is part of our program of breeding hybrids with *S. australis*. In our experience, hybrids with a dominance of *S. australis* in the background generally show the dominance of the shape of that species. This includes a dorsal sepal which protrudes forward, like a hood. The two upper petals are variously displayed, often close to the dorsal sepal. The labellum is protruding and prominent with a white pouch, relatively large for the size of the overall flower and is a striking feature of the flowers, making them more easily recognisable in the lower light conditions where they grow in the bush. The species is very floriferous for the size of the plant.

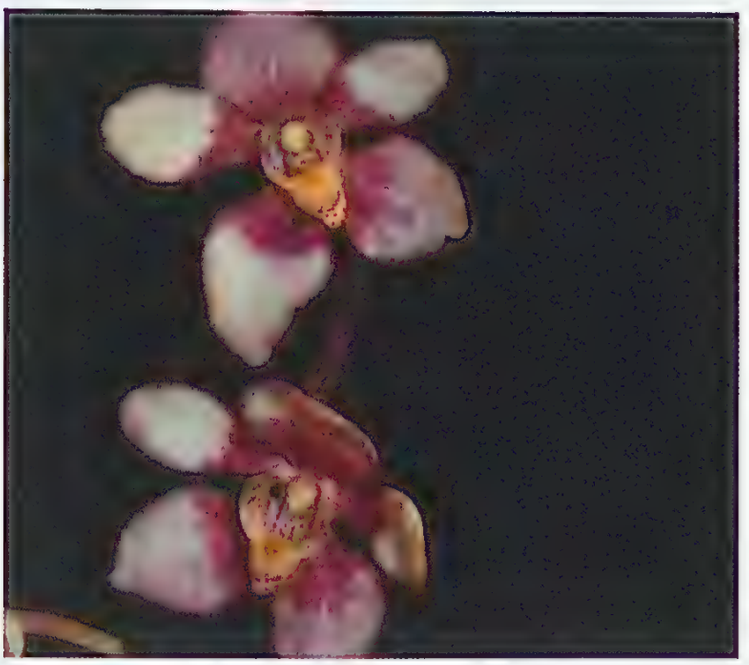
Sarcochilus Olive Nymph

The parent *S.* Olive Nymph (*S.* Melba x *S.*

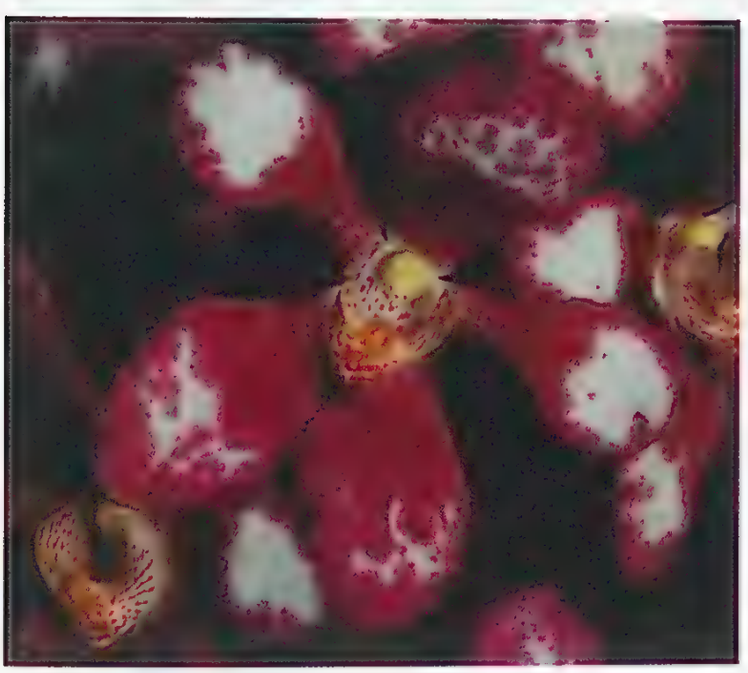
Sarcochilus australis 'Morwell'

Sarcochilus Maud #17

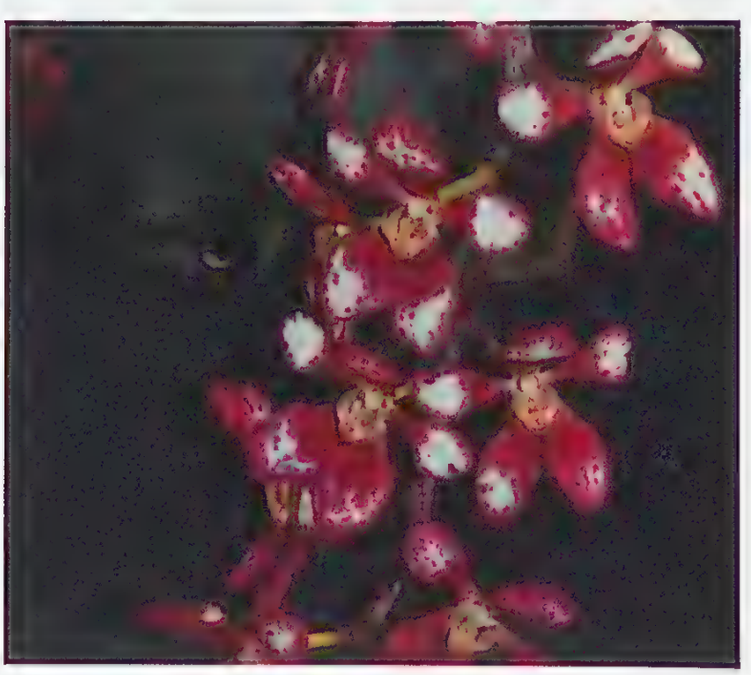
Sarcochilus Maud #5



Sarcochilus Maud #12



Sarcochilus Maud #1



Sarcochilus Maud #1

Sarcochilus Maud #18

Sarcochilus Maud #19

australis) was registered in 1989 by P. Adams and there are five registered hybrids with this cross. The parent *S.* Olive Nymph showed a wide range of results, ranging from small, slow-growing plants strongly resembling *S. australis* (which did not have longevity) to strongly growing plants taking after the vigorous primary hybrid *S.* Melba. Three seedlings from the cross have received quality awards (HCC) and the cross received an ASR/AOC in 2010. Plants are generally free flowering and with up to 22 flowers on the racemes, all facing towards the viewer, as in *S. australis.*

The *S.* Olive Nymph 'BS' parent was one of our seedlings. It is free flowering with pendulous racemes, and flowers are white with central brown bars. *Sarcochilus* Olive Nymph 'Pale Green' was also free flowering and pendulous, and the flowers had a distinct green tinge on the tepals, but less intense central colouration. The *S. australis* pollen used in both crosses was from a northern Tasmanian form.

Sarcochilus Cherie

The parent *Sarcochilus* Cherie has received no quality or cultural awards from the Australian Orchid Council or ANOS. The hybrid is dominated by the 75% background *S. fitzgeraldii*, and the flowers generally have red-purple colour which comes through strongly in patches, often very inconsistently across the raceme, depending on the *S. fitzgeraldii* parent used. Flowers tend to resemble *S. fitzgeraldii*, with only a little influence from the 25% *S. hartmannii.* They have club-shaped segments and an open flower, and racemes are erect to arching. The plants are more vigorous and easier to grow than *S. fitzgeraldii,* which is a lithophyte and requires low light and high humidity. Both *S.* Cherie plants used were from pollen provided by other growers.

Sarcochilus Cherie 'TE' was a seedling produced and used in breeding by Ted and Marg Elgood in Melbourne. Flowers had good substance and were white with a prominent red centre. The Elgoods had a wonderful quality collection of *Sarcochilus*

Sarcochilus Maud #17

species and hybrids, and this parent was of high quality with consistent flower colour.

Sarcochilus Cherie 'ING' was a plant of good quality from another grower with an unknown background. It had flowers with a lighter substance than 'TE' and less intense colouration in the centre.

Sarcochilus Maud

Sarcochilus Maud commemorates Maud Adams, and is a small growing plant that does well in a pot or on a mount providing it is frequently watered in summer in fairly high humidity.

We achieved pods with three crosses of *S.* Olive Nymph and *S.* Cherie from more than ten attempts.

S2 2004 *S.* Olive Nymph 'Pale Green' x *S.* Cherie 'TE'. A reverse cross was unsuccessful.

S3 2004 *S.* Olive Nymph 'BS' x *S.* Cherie 'TE'. Reverse cross not attempted.

S4 2004 *S.* Olive Nymph 'BS' x *S.* Cherie 'ING'. Reverse cross not attempted.

The theoretical background species contributions to this hybrid are *S. fitzgeraldii* 37.5%, *S. hartmannii* 25%, *S. australis* 25% and *S. falcatus* 12.5%. The pollination was made in 2004 and the cross was registered on 5/1/2009 by P & S Adams after flowering. It is generally considered that some features of the pod parent may be more dominant in hybrids and many hybridists will do crossings both ways to see which is more successful. We were curious to see what difference this would make but were unsuccessful in achieving crosses both ways.

Success in producing seed capsules was limited. Thirty different *S. australis* crosses were attempted by Peter Adams with *S.* Olive Nymph (four different plants) as pod parent in 2004. Eight pods were produced, four were flasked, and three produced viable seedlings. These are the crosses analysed here. The unsuccessful crosses were with *S. hartmannii* (x2), *S.* Carnival (x2), *S.* Burgundy on Ice (x2), *S.* First Light (x2), *S.* Cherie 'Nasarka'

(x2), *S. fitzgeraldii* and *S.* Velvet. Based on this data, *S.* Olive Nymph is not easy to breed with, possibly at least partly associated with the need for cool conditions in the capsule development stage.

When using hybrid parents, it is useful to know the range of features of the plants that have been produced by that cross, as it gives information about the hidden genetic potential. This includes, for example, if the results of the cross have been uniformly high in standard or whether most of the results were poor. It will also show what colours may potentially be expressed in subsequent generations.

Results

I located 14 plants of the three crosses made fifteen years ago, seven plants of S2, two plants of S3 and 5 plants of S4. Over time some seedlings were lost because they were slow growers (often those that struggled seemed to have more features of *S. australis*), and ideal growing conditions were not provided in our large orchid collection. Seedlings were generally slow to reach maturity as small flowering specimens, with a range of growth rates, leaf and floral characteristics (Table 1). Almost all seedlings have now flowered.

Plant Size

The most vigorous plant is a clumping plant with seven leads and six racemes and the S2 crosses tended to be the largest and best growing (e.g., S2#19). The slowest growing plants are small with a single lead in a 10 cm pot, others are compact with several leads. Overall, the plants from the S4 cross, which used *S.* Cherie 'ING', produced smaller plants with narrower leaves, with a lot more colour in the flowers and they were less vigorous growing.

Leaves

Leaves can be falcate and relatively wide or narrow and relatively straight (particularly S4). Leaf length is also variable. The slower-growing plants tend to have narrower leaves, and some seedlings of the S4 cross have leaves that exhibit attractive red pigments.

Racemes and Flowers

Raceme habit ranges from vertical to gently arching and pendulous. Plants with higher flower counts on the raceme were all pendulous due to the weight of the raceme. The flower shape tends to be open. This is to be expected as *S. hartmannii* is the only parent species with a filled-in shape. Segments are club-shaped, after *S. fitzgeraldii*, *S. falcatus* and *S. australis*. Plants showed varying degrees of hooding of the dorsal sepal from the *S. australis* influence, from mild to obvious.

Flower colours are highly variable. There are three distinct colours noted. The tepals can show deep red-purple or light mauve, while the centres can show pale red brown. Colours are always on a white background. One plant shows quite different colours, with a combination of colours over the tepals (plant #18). Labellum size is relatively small, coloured white or vivid yellow, with red markings, and some labellums were quite narrow, so the *S. australis* influence has not been dominant.

Flower count is variable, the largest plant has up to 18 flowers per raceme. The spacing of flowers can be a bit irregular, another influence of *S. australis*. Peduncles tend to be long relative to total inflorescence length.

Flower size is variable from the size of *S. fitzgeraldi*i to around the size of the smaller *S. australis* flowers. The S4 cross had the smallest flowers overall.

Culture

Our plants are all grown in pots as the death rate for plants on mounts is high. We have trouble keeping the humidity high enough in the growing conditions which can be extreme on hot summer days. More attention to protection and misting than we have provided are likely to reduce the losses.

The mix is well-drained, predominantly 9-12 mm New Zealand pine bark with about 20% small stones. The shade levels are medium, probably about 70% in summer and winter, with seedlings being placed at one end of the house where shade is higher. In a less shaded area, in an adjacent house that suits dendrobiums, the leaves become yellow and the plants do not thrive. Flowering is not reduced by this amount of shading. Plants are grown in a large plastic igloo covered with plastic and shade cloth, with extra western shading from mature *Eucalyptus* trees. The floor has a top layer of small stones to increase humidity. Watering is a combination of overhead and hand watering. During the growing season, they are occasionally fed with a weak soluble fertiliser, and when repotted, a low nitrogen fowl manure pellet fertiliser or slow-release fertiliser is added to the mix.

Discussion

There has been a steady list of registrations of hybrids using *S. australis* in recent years, as the interest in growing smaller plants with interesting shapes and colours has increased.

As of November 2021, there are 28 Royal Horticultural Society registrations for *Sarcochilus* hybrids with *S. australis* as one parent. Six used it as the seed parent, and the majority of 22 registrations used it as the pollen parent. As *S. australis* is not common in collections, it is not surprising that it is used mainly as a pollen parent. Concerning primary hybrids, *S. australis* has been used as a seed parent with two other small twig epiphytes, *S. dilatatus* (2014) and *S. weinthallii* (2018), and as a pollen parent with *S. ceciliae* (1989), *S. falcatus* (1997), *S. hartmannii* (1972) and *S. fitzgeraldii* (1980). It was also used to make an intergeneric primary with hybrid *Plectorrhiza beckleri* (syn. *Papillilabium beckleri*) (2021).

There is a relatively low fertility for crosses between *S. australis* and classic *Sarcochilus* hybrids, which I estimate to be about 10–15 % in 25 years of experience. Individuals can be fertile while others that are similar will not produce seed capsules or produce a capsule containing white hairs and with no viable seed. Climatic conditions can be important in the approximately 6-month interval between pollination and capsule maturity. A mild to warm few weeks following pollination seems to have a positive effect on capsule initiation, and very hot periods over the summer can result in yellowing and premature splitting of the developing capsules. In producing *S.* Maud, only some *S.* Cherie were fertile as was also the case with *S.* Olive Nymph. We used a group of parents and the positive results came from multiple attempts in a process of trial and error.

Comparing the same hybrid using different parents has demonstrated that using parents with different qualities influences the progeny very significantly and more than was expected. The S4 combination using the better-quality *S.* Cherie with strong central markings and the *S.* Olive Nymph with stronger central colour produced plants with more colour, including pigments on the leaves, and overall smaller plants with narrower leaves. Overall, the parents *S.* Olive Nymph 'Pale Green" and *S.* Cherie 'TE' produced the best-growing plants and higher-quality flowers. The combination of species produced three distinct colours in the flowers – the mauve blush which probably comes from *S. fitzgeraldii*, brick red and pale red brown which may have multiple origins. The pigmented leaves were unexpected.

Sarcochilus australis passed on the characteristic of the hooded dorsal. The unevenness of flowering on the raceme did not occur. The increased flower count is promoted by *S. australis* through *S.* Olive Nymph which can have high flower counts of up to 22 per raceme. The prominent labellum of *S. australis* tends to be lost in *S.* Maud. As found in other *Sarcochilus* crosses, there was a wide variation of plant forms and flowers in *S.* Maud, with many having the red/purple colours coming from *S.* Cherie, and shapes that range from open with club-shaped segments, influenced by *S.* Olive Nymph, to rounded segments influenced by *S. hartmannii* in the *S.* Cherie parent. In comparison, *S.* Frank (*S.* Olive Nymph x *S. fitzgeraldii*) in our

Table 1. Characteristics of seedlings of *Sarcochilus* Maud.

Cross	Plant size	Raceme number, length and habit	Maximum flower no. per raceme and details	Leaf habit
S3 2004 #5	Medium, two leads, leaves to 12 cm	Two, pendulous, 40 cm with long peduncle	Eleven. Dorsal hooding. Flowers 2.9cm. White flowers with light irregular, mauve spotting mainly on sepals, red bars in centre. Labellum bright yellow with brown markings	Little curving, upright
S3 2004 #14	Medium, two leads, leaves to 4cm long	One, horizontal, 12 cm with relatively long peduncle.	Four. Mild dorsal hooding. Flowers 2.6 cm wide. White with brown bars in centre. Yellow labellum with brown markings. Pale yellow labellum with brown markings	Falcate
S4 2004 #1	Medium. Four leads. Leaves to 10 cm long	Two, 28 cm with long peduncle,	Twelve. Moderate dorsal hooding. Flowers 2.9 cm wide, blotched red and white, front and back, labellum relatively wide, pale yellow with red bars	Gently falcate, upright
S4 2004 #13	Small habit, five leads, leaves to 12 cm long, red pigments	One, 24 cm pendulous, long peduncle	Eight. Hooding mild to moderate. Flowers 2.2 cm wide, white with heavy, irregular light red blotching back and front, labellum narrow, pale yellow with red bars	Leaves narrow, pigmented
S4 2004 #12	Small habit, one lead, leaves to 10 cm long, red pigments	Two, 18 cm short and arching	Eight. Mild hooding. Flowers small, 2.6 cm wide, white with irregular red blotching back and front, mainly yellow markings on labellum	Leaves narrow, upright, gently falcate, pigmented
S4 2004 #19	Small habit, two leads, leaves to 7cm long, poor grower	One, 21 cm pendulous, long peduncle	Nine. Minor hooding, flowers small, 2 cm wide, white with irregular brown-red blotching on all tepals, labellum narrow, pale yellow with brown bars	Leaves gently falcate
S4 2004 #21	Small, two leads, leaves to 12 cm long	Three, 26 cm, very long peduncle, pendulous	Ten. Medium hooding. Flowers 1.8cm, white with central red-brown colouration, labellum narrow, yellow with heavy purple bars and spots	Leaves falcate, pigmented, narrow
S2 2004 #17	Small to medium habit, five leads. Leaves to 11 cm long	One, 29 cm, arching	Fourteen. Moderate hooding. Flowers 2.9 cm wide, white with central solid brown, labellum pale yellow	Leaves falcate, habit upright
S2 2004 #2	Medium habit, three leads. Leaves to 8.5 cm long	Three, 18 cm, short, horizontal to arching	Six. Moderate hooding. Flowers 2.5cm wide, white with central solid brown, labellum narrow, pale yellow	Leaves falcate, habit upright
S2 2004 #10	Medium, four leads, leaves to 9 cm long	Three, 14 cm, horizontal, short	Nine. Mild hooding. Flowers 2.5 cm, white with central solid brown, labellum pale yellow.	Leaves falcate, habit upright

S2 2004 #4	Small to medium, one lead, leaves to 10 cm long	Two, pendulous, 32 cm, long with relatively long peduncle	Eleven. Moderate dorsal hooding. Flowers 2.4 cm wide, White with brown centre. Labellum narrow, mainly white	falcate
S2 2004 #18	Large, five leads, leaves to 14 cm long	Four, 35 cm, long peduncle, pendulous	Twelve. Minor hooding. Flowers 3.1 cm. Flowers variable in colour along the stem. Blush of mauve on edges of tepals, graduating to yellow and brown bands in centre. Colour partial on back of flower. Different to rest of cross. Labellum bright yellow	Spreading habit
S2 2004 #19	Large and most vigorous plant of the cross, six leaves to 18 cm long	Seven, 36 cm, long peduncle, pendulous	Eleven. Prominent hooding of dorsal sepal. Flowers 3 cm white, scattered and variable mauve spotting on all tepals, central brown bars, labellum yellow with single brown bar.	Leaves slightly falcate, spreading habit
S2 2004 #20	Small to medium, three leads, leaves to 13 cm long	Three, 23 cm long, gently arching, long peduncle	Ten. Minor hooding. Flowers 2.6cm, white, central brown, labellum pale yellow	Leaves slightly falcate, broad

collection, has a much more open flower with marked club-shaped segments due to the lesser influence of *S. hartmannii.*

The future of the *S.* Maud breeding line could involve crossing back to *S. hartmannii* or its hybrids, especially ones with bright colours, or to other coloured classic hybrids that can impart vigour and variations that allow selection of superior forms. Breeding back to *S. fitzgeraldii* is likely to result in poor shape, and with *S. hartmannii,* colour is very likely to be lost. The challenge is to retain the most attractive characteristics of *S. australis,* namely the excellent presentation of flowers to the viewer, long many-flowered racemes with nicely spaced large flowers and the unusual non-classic shapes that contribute charm to variously coloured flowers.

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Sheryl Lawson is a specialist grower and breeder of Australian epiphytic orchids, and an AOC and ANOS judge.

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Season 2021 Highlights in an Australian Orchid Collection

Text and Photos Peter Adams | pbadams45@gmail.com

Summary

The results of the 2021 flowering season in my cool-growing collection in the Dandenong Ranges, Victoria were mixed concerning quality and quantity of flowers. *Dendrobium speciosum* and *Sarcochilus* species and hybrids flowered very well, but other *Dendrobium* species and their hybrids flowered spasmodically and few plants, even awarded ones, produced a quality display. The highlights were first-generation *D. speciosum* var. *curvicaule* and inter-varietal crosses flowering for the first time, Yarra series hybrids, advanced generations of *D. kingianum* and non-classic *Sarcochilus* hybrids with a dominance of *S. australis*. The reasons for less than average flowering in some groups are uncertain.

Introduction

For Australian orchid breeders, the flowering of their hybrids has the potential for providing highlights in each flowering season. Under cool southern Victorian conditions, the time to first flowering can be long followed by a further wait of several years for optimal results. *Dendrobium speciosum* is the slowest to develop in south-eastern Australia, and due to a short growing period, an almost prohibitive 12–18 years can usually be expected before the first flowers appear. *Dendrobium kingianum* and hybrids take 4–5 years from pollination to flower and a further 5–6 years to form a mature plant. *Sarcochilus* flower much earlier, tend to grow all year round and flower first at much the same time as when grown further north. This year a good number of *D. speciosum* crosses made in 2004–5 flowered for the first time after very low numbers flowered in the past 3 years.

For every crossing that produces flowering plants, a small percentage can result in clear improvements in quality and worthwhile plants. Since commencing breeding in the 1980s, we have discarded a high percentage of crosses, as has been noted in breeding other dendrobiums, for example, soft canes (Yamamoto 1972). Some season highlights of a few successful crosses are described here with the story of the breeding and comments on outcomes and breeding lines. Recording the results of breeding is rather infrequent and can encourage growing and provide information to other breeders about what has been useful or unsuccessful.

Dendrobium speciosum

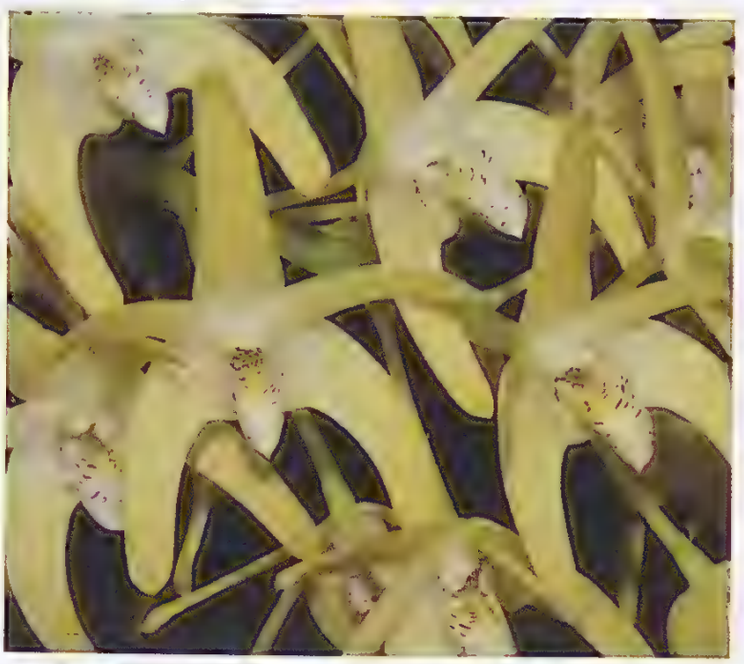
The purpose of a single foray into *D. speciosum* breeding was to create some new inter-varietal and intra-varietal crosses using plants not previously involved in breeding, except for 'Windermere' and 'National White' which in 2004 had a proven record of being successful parents. Shorter growing forms with quality flowers of varieties *boreale*, *blackdownense*, *curvicaule* and *speciosum* were selected as parents. The first seedlings to flower in 2018 were var. *boreale* x var. *speciosum* 'National White' and two outstanding seedlings flowered in 2021 with the pure white flowers, excellent presentation and heavy substance of 'National White' and the wider flower segments of var. *boreale* 'Paluma'. The combination of Covid 19 lockdown restrictions and the requirement of ANOS judging for three judges to see and inspect the plants, meant that Victorian plants could not be considered for awards.

Other successful crosses flowering for the first time were the pale yellow inter-varietal var.

Dendrobium speciosum var. *boreale* 'Paluma' x var. *speciosum* 'National White'

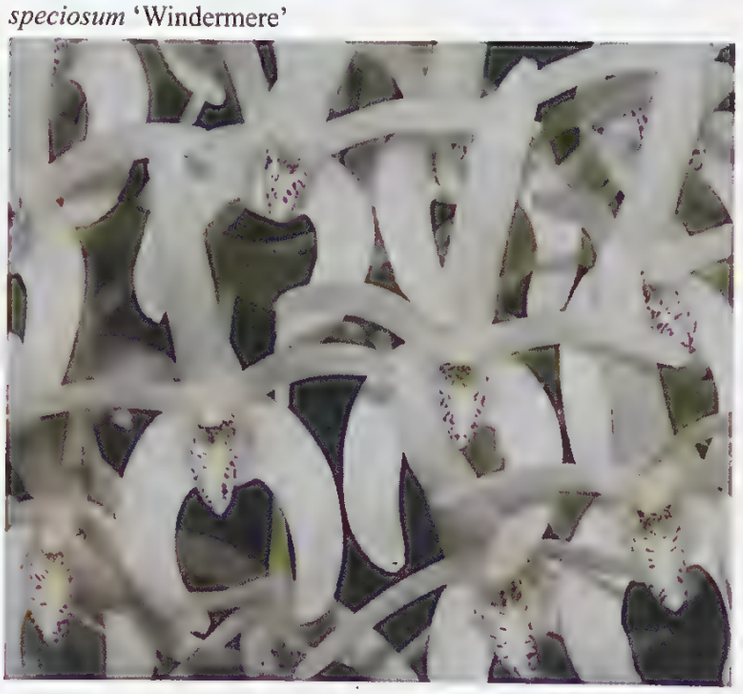
Dendrobium speciosum var. *boreale* 'Paluma' x var. *speciosum* 'National White'

Dendrobium speciosum var. *curvicaule* 'Cathu Plant 10'



Dendrobium speciosum var. *curvicaule* 'Cathu Plant 10' x var. *speciosum* 'Windermere'

Dendrobium speciosum var. *grandiflorum* 'Lemon Ice' x var. *curvicaule* 'Cathu'



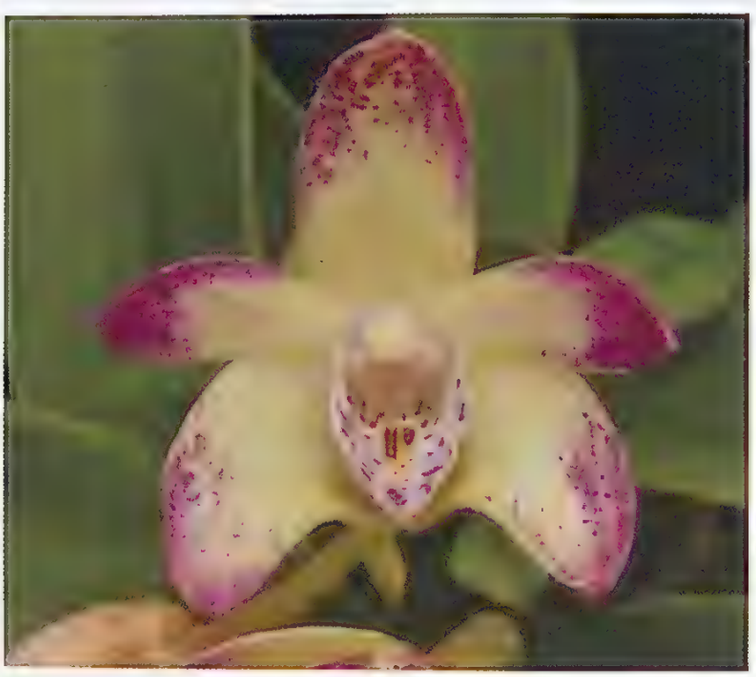
Dendrobium speciosum var. *speciosum* 'National White'

Dendrobium Yarra Peach

Dendrobium Yarra Star 'Longlife Cream'

Dendrobium Yarra Quest

Dendrobium Yarra Moon 'Blushing Moon'



Dendrobium Yarra Song 'Multi'

Dendrobium Yarra Song 'Blood on Snow'

curvicaule 'Crediton Cream' AM/AOC x 'Harry Klose' AM/AOC, and the cream var. *curvicaule* 'Cathu plant 10' x var. *speciosum* 'Windermere'. These results show that significant improvement is possible in *D. speciosum* in one generation.

Dendrobium Species and Natural Hybrids

D. gracilicaule 'Rocky River NSW'

This species flowered particularly well in Victoria this year. In Australia, it occurs in the tropics and subtropics from the Hawkesbury River, New South Wales to the Annan River in north Queensland. This species is often undervalued in collections and can form beautiful specimens in pots or mounted. The form from the western limit in northern New South Wales has bright purple markings.

D. × *gracillimum* 'Rocky River'

This is an occasional natural hybrid between *D. speciosum* var. *hillii* and *D. gracilicaule* found where the two species are growing close together in significant numbers. The *D. speciosum* in the areas of origin has large flowers for the variety and are not tall, so the natural hybrids are compact with fairly large flowers and are well-suited to a collection.

'D. × *profusion'*

The name is informally used for the backcross of *D.* × *delicatum* and *D. kingianum* from Alum Mountain in New South Wales. These collected plants are part of a complex of natural hybrids and were grown under this name in Ted and Barbara Gregory's collection for many years. The flower colours range from very pale mauve, mainly white, to flowers with purple tepals on a white background and a labellum that resembles *D.* × *delicatum* rather than *D. kingianum.*

D. mortii

This is a very fine terete-leaved member of section *Rhizobium,* occurring often in rainforest including elevated areas like *Nothofagus* forests, from the Hunter River, central New South Wales to southeastern Queensland. It grows best on a mount and requires cool humid conditions with good air movement and moderate light conditions.

Colourful _Dendrobium_ hybrids

D. Yarra Song 'Blood on Snow' (*D.* David Adams x *D.* Les Adams)

The range of colours and colour combinations in this sect. *Dendrocoryne* hybrid is wide, with the influence of *D. fleckeri* and *D. gracilicaule.* This was a first flowering featuring pure white tepals of heavy substance and a striking purple/white labellum. The cross was a remake with different parents, one of few we have made, because the initial cross produced many different bright colours, from white to yellow, green, deep mauve and combinations, a greater variety than in any other Yarra cross.

D. Yarra Song 'Kakadu'.

A seedling from the same cross as 'Blood on Snow' with flowers that have a bright yellow background with purple segment tips and strong purple bars on the labellum and front of the column. The callus has yellow stripes and unusual deep purple zones.

D. Yarra Star (*D.* David Adams x *D. speciosum*) 'Longlife Cream'

This grex is noted for well-presented white and cream-yellow flowers on upright racemes. There is a strong *D. speciosum* influence combined with the contribution of *D. kingianum* and *D. fleckeri* to produce rounded flowers, a good example being the cream 'Icarus' HCC/AOC. 'Longlife Cream' has unusual yellow tepals edged with deep mauve and a white labellum with a few purple bars and a bright deep yellow callus. In keeping with the name, in the cool 2021 spring, the flowers lasted more than a month.

D. Yarra Star 'Yellow Cascade'

Most plants of this cross made in 2003 have erect to arching racemes, but this one flowered in

September with pendulous habit and vibrant pale-yellow flowers with a broad labellum marked with yellow suffusions on the midlobe.

D. Yarra Moon 'Blushing Moon' (*D. kingianum* ('Pale Dragon' AM/AOC x *D.* Jesmond Gem 'Olive Adams' FCC/AOC)

The *D.* Yarra Moon cross has been the most successful in the Yarra series and is derived from the best line bred and two FCC *D.* Jesmond Gem. They are robust plants with relatively large heavy textured flowers from white to purple splashed. This one has erect racemes bearing 8–12 flowers that are white with splash purple at the tepal tips (from *D. kingianum*), and a labellum with heavy purple spotting and a yellow callus.

D. Yarra Peach (*D.* Yarra Mist x *D. kingianum*)

This hybrid was made in 2013 and registered in 2018. The goal was to reduce the height of the rather tall *D.* Yarra Mist by crossing to a shorter *D. kingianum*, aiming for very compact plants in the *D. kingianum* style with high floriferousness. They flowered first in 2018, and in 2021 were short and compact with erect racemes bearing up to eight flowers which creates a dense display in pastel mauve colours. The labellum is white with a deep purple peppering of fine spots, typical of Yarra hybrids and not of *D. kingianum.* It will take a few more seasons to find out if the plants remain short and compact, and if they do, this will represent a clear advance in breeding.

D. Yarra Plum (*D,* Yarra Quartz 'F. Lowe' HCC/AOC 2013 x *D. kingianum* 'Eva' HCC/AOC 2013)

This cross was made in 2013 and has potential for quality awards. The goal was to produce short plants with rich pastel mauve colours like 'F. Lowe', which has almost iridescent flowers. When colour is that vibrant, pastel becomes as beautiful as a vivid colour like gold or orange. 'Eva' is a rich deep purple splashed compact *D. kingianum* and on account of its colour and rounded shape, was awarded as a small plant in a 10 cm pot. Some seedlings that flowered in 2021 showed good colour and flower count on short plants, but it is too early to evaluate fully the quality of colour and the likely size of plants at maturity.

Hybrids with a small component of *D. bigibbum*

D. Yarra Quest 'Top Lemon' (*D.* Inquest x *D. speciosum* var. *curvicaule* 'The Goddess ')

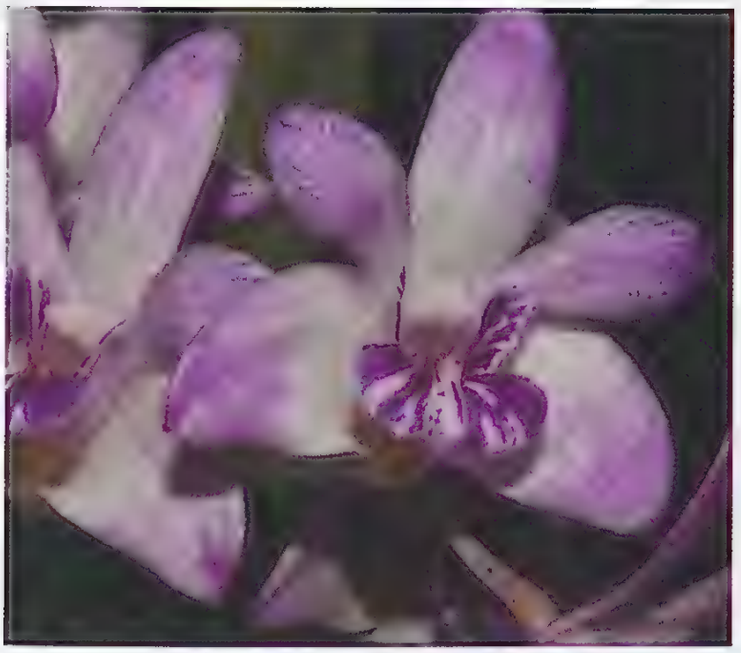
Dendrobium Yarra Quest has 3% *D. bigibbum* which extends the flowering season forwards in Victoria to August and increases the flowering time from August to October with a succession of this grex flowering through this period. The labellum is also broadened in many of these plants and there is colour variability from off white, pure colour yellows, cream-yellows with and without dark purple markings from the *D. tetragonum* influence. The flowers tend to be star-shaped with narrow to moderately wide segments, following the *D. tetragonum*., and the labellums often have two tones with purple and mauve, one light and the other dark. 'Top Lemon' has pure yellow flowers, star-shaped on long semi-erect racemes bearing up to 19 flowers. Further examples of this cross can be seen in Adams (2021).

D. Yarra Quest 'Sheryl'

A white flowering small seedling with the broadest labellum in the 50 plants of the group flowered so far. The segments are among the broadest in the crossing, and the labellum is white and strongly purple barred, creating a striking contrast. The flowers opened in mid-August and were still in good condition in mid-October. The small amount of *D. bigibbum* has a profound effect on the flower and its lasting qualities that were not expected. The plants were slow growing for some years initially, but once mature, grow well in cool conditions.

***D. kingianum* mature plants and small seedlings**

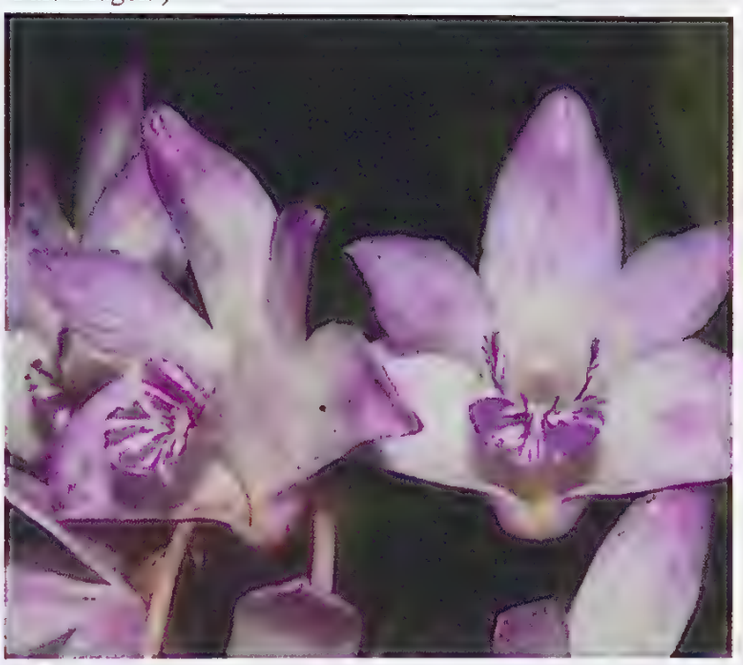
The 2021 flowering season was below average, the main problem being low general floriferousness, across all plant sizes, in naturals and different breeding lines. Plants that receive more attention



Dendrobium kingianum 'Queens Jewel's' x 'Pale Maid'

Dendrobium kingianum 'Little Miss Superb' ('Coolstrappa' x 'Pale Dragon')

Dendrobium kingianum 'Fire and Ice'



Dendrobium kingianum 'Remarque' x 'Bar Speckler'

Dendrobium kingianum 'Superb Late' x 'Late Purple'

Dendrobium kingianum 'Dragonette'

Sarcochilus Duno Judilly 'HT'

to culture usually produce better displays, but this season some well-grown plants did not flower at all well, some not at all. Nevertheless, in a large collection there are always highlights, often not predicted.

Our breeding program started in the late 1980s and has been briefly outlined in Adams (2017). The details and photographs of many of the early parents are described in Adams and Lawson (1995). The goals were to improve flower quality across all colours, to improve overall plant quality, especially presentation, extend the flowering season at both ends and the longevity of flowers. The initial starting point using plants with 3–4 generations was with plants that had flower quality that was at best moderate, and only some of the goals have been achieved at this time point. About 4 generations forwards, there are clear improvements in quality, as evidenced by awards in several judging panels, and the highlighted plants that are described and illustrated here show improvement in the latest generation, with longer-lasting flowers, in good condition for a month, and extension of the season into late October. It has not been possible to produce earlier flowering than the initial starting point. The greatest advances are in mauve, splash purple and splash mauve and striped or speckled colour categories.

D. kingianum 'Little Miss Superb'

An advanced generation seedling from combining the Dragon line with solid purple labellum with the Candystriper line (which feature a candy-stripe or barber's pole labellum). The racemes present well on stout upright racemes and the flower colour is splash mauve with a labellum colour intermediate between that of the parents.

D. kingianum 'Fire and Ice' AM/AOC 2016 ('Purple Peon' x 'Bar Speckler')

The cross was originated in 2001 and this plant was slow growing. 'Candystriper' has had a strong influence on heavy striping of the tepals and labellum and 'Purple Peon' has contributed to

Sarcochilus Margaret Isaac

Sarcochilus Russell Lee

heavy dark purple on the labellum. Striping can arise unpredictably in many different breeding lines, and also occurs in naturally occurring plants e.g., 'Roy Gill No. 2' from Comboyne Plateau and 'Len's Stripey' from the Coffs Harbour-Dorrigo region.

D. kingianum ('Remarque' x 'Bar Speckler')

Both parents are from the 'Candystriper' line that commenced in the late 1980s. 'Remarque' is an easily recognised large widely spreading splash mauve with a candy-stripe lip and this seedling is similar, but larger again (35 mm diam.) with heavier purple on the labellum. Most of the siblings were culled due to poor presentation. Flower size, floriferousness and good presentation are the outstanding features of this plant.

D. kingianum ('Queen's Jewels' x 'Coolstrappa')

This has striped tepals and is a crossing between the Purple Peon/Candystriper and the Candystriper/ Cream 69 lines, which is one of the most advanced stages of our breeding representing 7 generations.

D. kingianum 'Multiceme' ('Superlate' x 'Late Purpat')

A splash purple that flowers very late in the season, late October lasting into November. As the name suggests it has the advantage of more than one raceme on each cane and is bred for late flowering. 'Superlate' is 'Pale Dragon' x 'Superb Candystriper type' x and 'Late Purpat' is the late flowering 'Purple Peon' x 'Patience'. This represents a combination of Dragon, Purple Peon, Candystriper and cream 69 lines, all having produced some good results. The flowers are borne on stout erect racemes and are of heavy substance, well rounded with broad petals which improve *D. kingianum* and have a purple/white striped labellum with a white margin. The reverse side of the flowers has a deep mauve blush. The quality comes from combining the best breeding lines developed over twenty years.

D. kingianum 'HKGG' ('Harryalan' x 'Alan Garrett')

The purple line has been difficult for many breeders to make improvements, and we have also struggled with it. This plant is named to honour the Hastings Kingianum Growers Group (HKGG), which started the purple line in about 1977 using plants from the Gloucester district. Alan Garrett and Harry Klose were key members of the group, and Alan is deservedly honoured twice in the breeding. He is still assisting in reviewing articles on *D. kingianum* breeding although, unfortunately, the group no longer operates. The main problems in breeding have been infertility, due to some polyploidy (Adams 1992), slow-growing and leaf drop in areas away from the origin of original parents and limited improvement in flower size and numbers.

'Harryalan' is 'K66' x 'Karl Marx', both Gloucester plants and 'Alan Garrett' is 'Harryalan' x 'Black Adder' HCC-AD/AOC, the latter being a cross of 'Alison' x 'Inferno'. It is a backcross of a 'Harryalan' seedling onto 'Harryalan', a classic technique used to collect up superior genetics in line-breeding of many plants and animals. The contribution of 'Inferno' from Cairncross near Port Macquarie, distant from Gloucester, appears to provide genetics that promotes better growth and flower numbers, and we advocate combining Gloucester and non-Gloucester lines to develop better purples. The cross is slow-growing, but faster than pure Gloucester origin plants, of short stature in 10 cm pots with racemes that present well with 5–6 small flowers and a very deep purple colour. There is still a way to go with this line.

D. kingianum 'Stopsign' ('Effies Dragon' x 'The Monster')

This is a backcross, of 'Effies Dragon'('Purple Peon' x 'The Monster') to one of its parents. Most of the siblings of 'Stopsign' were inferior or no better than others in the Dragon line, so they were discarded. The colour is unusual, more red-purple than purple, hence the name, with a contrasting almost solid purple lip. It flowers in very late October and extends the season, with very good shape and size (32 mm diameter), but there were only two flowers per raceme, in a season where this was often seen in plants that usually are much more floriferous.

D. kingianum 'Peon Splash' AM/ANOS 2021; AM/AOC 2021 ('Patience' x 'Purple Peon')

A specimen size plant more than 50 cm across with 28 erect racemes, some more than one per cane. There was an average of more than six flowers per cane and a total of 168 flowers, making it the best highlight of the 2021 season. The cross was made in 2004 and the plant first flowered in 2009. It has built up over the years with pristine leaves and no leafless canes. It has splash mauve flowers with strong purple stripes (veins), a white centre and a strongly purple marked labellum on a white background. 'Purple Peon' is a parent of the Dragon line and 'Patience' is a late flowering rich mauve from the Cream 69 line. The plant was at its optimum in mid-October and stayed in good condition for almost three weeks. It is one of the best *D. kingianum* we have produced, on a par with 'Queen's Jewels' and is capable of having more flowers in a better flowering season. From an inspection of plants from this period of breeding, it seems that nearly all were culled over the years.

D. kingianum 'Dragonette' ('The Monster' x 'Purple Peon')

This cultivar is fairly well known, as it was released to a well-known commercial nursery many years ago and has been sold as mature plants. It is a typical purple splash and solid purple lipped Dragon. Many seedlings of this line were produced and only a few of the potentially awarded plants have been shown. When they flowered at an optimum size there was no ANOS panel in Victoria. 'Dragonette' has erect racemes and 7–9 quality flowers per raceme. It was not considered to have the potential for further breeding initially, but this cross improved significantly, particularly in flower counts in the four years after the first flowering. This illustrates that determining quality can take up to about 7 years, and if hurried, may

Sarcochilus Effie

Sarcochilus Heidi x Duno Nickys Twin

Sarcochilus Fitzhart

lead to throwing away outstanding plants.

Sarcochilus

Species and hybrids flowered well in 2021 at the usual time, unlike the dendrobiums, which were unusually two to three weeks early. Classics such as *S. hartmannii, S.* Judith, *S.* Burgundy on Ice, *S.* Melba and *S.* Heidi were of good quality but there were no shows to exhibit them due to Covid.

The non-classics bred with smaller species like *S. australis* and *S. spathulatus* were the main highlights, including *S.* Olive Nymph (*S.* Melba x *S. australis*), registered in 1989 and its progeny, *S.* Effie (*S.* Olive Nymph x *S.* Fitzhart), *S.* Edna (*S.* Olive Nymph x *S. hartmannii*), *S.* Russell Lee (*S.* Olive Nymph x *S.* Heidi) and *S.* Maud (S. Olive Nymph x *S.* Cherie). A new cross which flowered for the first time, *S.* Cherie x *S. australis*, has been registered as S. Olive. The name Olive refers to the mother of the originator.

These plants are late flowering because of the influence of *S. australis* and can extend the season to Christmas. They are judged with a different approach from classic *Sarcochilus,* taking into account what is expected in flowers of hybrids dominated by smaller different shaped 'twig epiphyte' species (Adams 2018). These may do best in cool growing conditions such as the Dandenong Ranges in Victoria.

The parent *S. australis* grows (or used to grow) in the higher parts of the Dandenong Ranges but does not survive many years in extreme hot summer days in cultivation. For that reason, these hybrids were developed and although some of the seedlings more resembling *S. australis* die, the majority grow well in cool humid summer conditions and the breeding goals have mainly been achieved. The racemes are erect, semi-erect or pendulous and the flowers are dominated by features of the smaller epiphytes. However, they are slow growing in my conditions and some have only one large single growth after 20 years. Plants can produce a fine display of 5–6 long racemes, each with over 15 flowers.

Discussion

Orchid breeding involves much experimentation and reflection, often discussed with other enthusiasts, but not usually recorded. *The Orchadian* has been a site for these records providing information for others and providing a historical record. Many breeders have produced improvements but there is no account of how this was achieved, their analysis and the plants that delivered success. My forays into breeding have been limited to four main areas, *D. kingianum*, *Dendrobium* hybrids, *D. speciosum* and *Sarcochilus*, mainly non-classics based on *S. australis*. This has taken about 30 years, which has been the minimum to achieve reasonably consistent results and a few successes. The highlights of 2021 provide information about the process, starting goals and outcomes, and the way forward. Everyone who grows has some notable experiences, and I hope others will write about them.

Why was 2021 a less than average season?

We can only speculate on why it was a poor year for the flowering of *Dendrobium* in most areas, except for *D. speciosum.* The previous season of 2020 was exceptionally good for growth and plant development, after several hot summers where plants were stressed and did not grow so well. The better season might have been due to cooler wetter conditions and only a few days over 38° C. We have observed that runs of several days over 40° C tends to reduce growth and to stress plants, as evidenced by excessive leaf drop and reduced numbers of new leads. Perhaps another year is needed to harden new growths before better flowering can be expected.

Initiation of flowering

The process of initiation of meristems that become flower racemes in *Dendrobium* is not well understood but probably occurs much earlier than most growers realise. The microscopic meristems probably start in late summer, triggered by temperature drops at night. These drops are subtle

and may involve a certain minimum number of hours below a critical value, as happens in tropical dendrobiums and stone fruits (the chill factor).

In Victoria, new growths appear from about May and develop slowly over the cold winters, then more rapidly in early spring. There are a small number of things growers can do to assist flower initiation. Providing potassium fertiliser in the latter half of the growing period over summer is a well-established practice, as is growing plants in excellent conditions with no overcrowding and maximum suitable light all over the plant. I will look with interest to the quality of growth this season and flowering in 2022.

Results in 2021

Even in a poor year, there are always a few highlights if the collection is large enough, as it ideally needs to be when breeding Australian orchids. Flowering at least 50 seedlings of a cross, and preferably more, is essential to develop improved plants that warrant use in further breeding. Some crosses will not generate any 'keepers' but in later generations of carefully selected line breeding, there are likely to be at least a few outstanding plants. The higher the frequency of improved seedlings in a crossing, the more likely the parents selected from it will pass on good genetics. We select the best results from a season and group them to provide the best possible culture, to hasten growth to at least a 10 cm diameter pot, which allows better evaluation. *Dendrobium speciosum* and *Sarcochilus* hybrids seem to produce superior flowering plants in earlier generations than *D. kingianum*. There is a long wait time for the first flowering in *D. speciosum*. The few outstanding finds each year that can progress breeding make the search for highlights rewarding and worthwhile.

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Dendrobium kingianum Bidw. - A New Flower Style with a Flared Labellum

Text and Photos by Peter Adams | pbadams45@gmail.com

Summary

Dendrobium kingianum has a labellum with wide variations in shape and size. In natural populations, there are occasional plants with wide side lobes but none of 150 plants surveyed met the definition for a flared labellum which includes a reduced or absent notch between the forelobe and midlobe. In 2011, a fully flared labellum was noted in a crossing between *D. kingianum* 'Pale Dragon' (labellum not flared) and *D. kingianum* 'Wizz Fizz' (flared labellum), representing two different lines in the *D. kingianum* breeding program. Progeny of these plants and other line-bred plants can produce flowers with labellums that are consistently flared. *Dendrobium kingianum* 'Purple Peon' is a parent in all of the flared progeny, and in some cases, *D. kingianum* 'Wizz Fizz' is also in the parentage.

Introduction

Dendrobium kingianum (small rock orchid) is highly variable in plant shape, and flower colour and shape in natural and linebred plants and makes an interesting collection. In the 1960s to 1990s, there was a wide interest in growing and breeding *D. kingianum*, led by W. and J. Cannons, Ken Russell, T. and B. Gregory, Hastings Kingianum Growers Group and Neil Finch among others (Adams and Lawson 1995). In recent years it has become less fashionable, and less available commercially. A factor in the decline was a pre-occupation with attempting to breed deep purple flowers, which were very often inferior in other respects, and did not always grow and flower well. The species remains one of the most satisfying to grow, with mauve, splash mauve and solid, purple-lipped forms receiving the most awards.

We have assembled a large collection of natural *D. kingianum* over many years and have linebred to the 8th generation. Breeding of selected seedlings have resulted in some significant improvements in floriferousness through multi-raceme habit, increased floral size and filled in shape and novel colour combinations (Adams 2017). In 2011, we noted seedlings with flared labellums and made crosses to attempt to raise more plants with this feature (Figs. 1–6 illustrate the parents). This article reports our results, identifies the probable parents responsible and the occurrence and nature of wide labellar parts in naturally occurring plants.

The *Dendrobium kingianum* Labellum

The most variable and conspicuous feature of the flower is the labellum, especially the midlobe at the front. Eight main midlobe shapes have been described (Adams & Lawson 1995), but there are other less common forms and some intergrading. Broadheart, Spade and Mixed are the most common shapes in plants of natural origin, while Broadheart and Mixed are most frequently seen in linebred seedlings up to 1995. In some naturally occurring plants and some linebred, more than one labellar type exist on a single plant. Labellar patterns of purple-mauve and white are also variable in natural and linebred plants. Some parents are more dominant, for example, *D. kingianum* 'Candystriper' usually passes on a candystripe pattern on the midlobe.

A wide labellum with some widening of the forelobe lateral (or side) lobes is occasionally seen in natural populations, mainly in the southern part of the distribution range between Gloucester and Grafton in New South Wales (Adams & Lawson, 1995). In this survey of the approximately 150 naturally occurring plants, only eight showed

Fig. 1 *Dendrobium kingianum* 'Jacques Miller' HCC/AOC 2011 - Candystripe flared labellum

Fig. 2. *Dendrobium kingianum* 'Purple Peon'

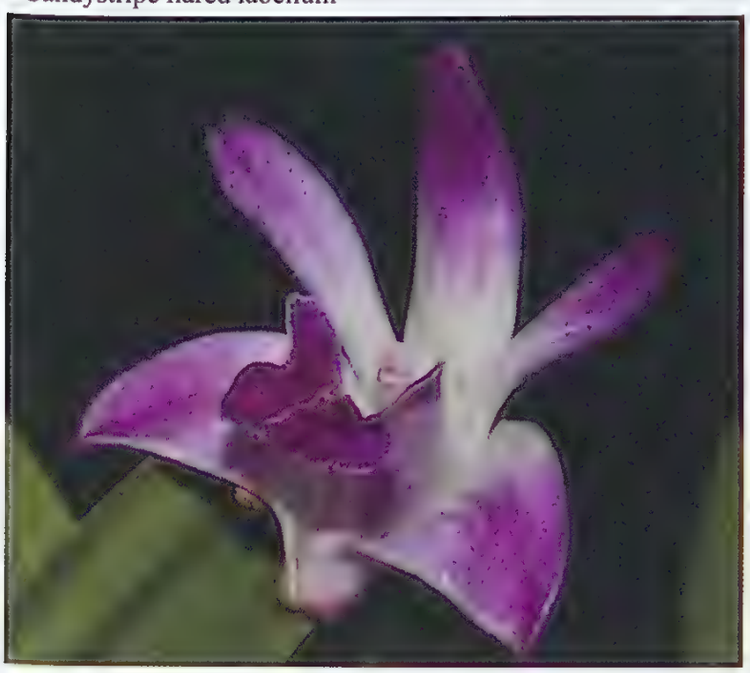

Fig. 3. *Dendrobium kingianum* 'Purple Peon'

Fig. 4. *Dendrobium kingianum* 'Pale Dragon' AM/AOC 2003. Parent of plants with flared labellums.

Fig. 5. *Dendrobium kingianum* 'Wizz Fizz' HCC/AOC 2004. Parent of plants with flared labellums.

Fig. 6. *Dendrobium kingianum* 'Pale Dragon' x 'Wizz Fizz'- non-flared

Table 1. Widened forelobes in naturally occurring *Dendrobium kingianum* in New South Wales.

Dendrobium kingianum	Location	Flower colour	Labellum colour purple:white	Comments
'Rocky River JB'	West of Grafton	splash purple	40:60	Broad labellum, conspicuous notch
'Grafton triploid'	Grafton	mauve	50:50	Broad labellum, conspicuous notch
'Boundary King'	Coffs Harbour	mauve	80:20	Broad labellum, conspicuous notch segments reflex
'Red Gum''	Cairncross	purple	70:30	Broad labellum, high side lobes, conspicuous notch
'Stony Creek 167'	Cairncross	deep mauve	70:30	Fairly broad labellum, widely flared side lobes, conspicuous notch
'Inferno'	Cairncross	deep mauve	60:40	Broad labellum, conspicuous notch
'Pink Icicle'	Kew	pale mauve	50:50	Widely flared side lobes, medium size midlobe, conspicuous notch
'Herbies Mountain Grey-blue'	Gloucester	blue mauve	70:30	Broad labellum, notched spade, conspicuous notch

prominent widening of the forelobe (Table 1). There was a distinct notch between the forelobe and midlobe, so these labellums were not considered to be flared. The flower colour ranged from mauve to purple.

Definition of a Flared Labellum

I define a 'flared labellum' as having a conspicuously flared forelobe, a wide midlobe AND either a much reduced or absent notch between the two lobes, so the labellum appears as a splayed or curving blade when seen from the front and lateral view (Figs.7–8). This contrasts with non-flared labellums (Figs. 9–12).

The sidelobes of the forelobe may look high or low if they appear to be flattened laterally (Table 2). The naked eye is better at discerning distances and shapes than attempts to measure the curved surfaces involved. Labellums in some linebred flowers meet the definition, but the naturally occurring flowers in those examined do not.

A very wide-spread labellum with bands of purple and white is stunning and unusual in *D. kingianum*. It could be described as fanned, outspreading, or deltoid, and was a striking feature first seen in October 2011 in a batch of sixth-generation linebreeding seedlings of *D. kingianum* 'Pale Dragon' x 'Wizz Fizz'. The first seedling was named 'Jacques Miller' after the outstanding immunologist from Walter and Eliza Hall Institute (WEHI) in Melbourne. The plant had four upright racemes in a four-inch pot, almost white flowers, and an extraordinarily wide, cascading labellum of fine purple and white bands. There are no conspicuous side lobes or a notch between the forelobe and midlobe on the lateral view. Perhaps this feature contributed to the small plant being awarded an HCC/AOC with 78 points. The labellum is a novel feature and has been consistent on all flowers in every flowering season in the plants described below.

Further flowering of this cross in 2012 revealed several more with flared labellums and colours ranging from almost white to deep mauve magenta (Table 2). Three more prominently flared examples were named after other leading WEHI medical scientists who were influential in the career of the author. 'Don Metcalf' has white flowers with mauve tips on the tepals and has grown well into a large plant. 'Shortman', named after Ken Shortman, has pale mauve stripes on a white background, with a small trace of a notch between mid and forelobes, excellent size and shape in a four-inch pot, and was immediately used for further linebreeding. Unfortunately, it succumbed to extreme summer conditions, but the progeny live on. 'Gus Nossal', named after the renowned Director of WEHI, flowers in late October, with deep mauve tepals and a white centre. The labellum was wide (1.2 mm) with deep mauve and white stripes and a clear white margin, and excellent shape and texture. There were initially only two flowers on a struggling plant with a few aerial growths, an unusual feature in this line.

Four non-flared seedlings of the *D. kingianum* 'Pale Dragon' x 'Wizz Fizz' cross are recorded in Table 2 and their flower colours and other details except for the height of the forelobe are not different from the flared labellum seedlings.

Breeding Results for Flared Labellums

The parent of the cross producing flared labellums, *D. kingianum* 'Pale Dragon' of the Dragon line ('Purple Peon' x 'The Monster') has a very prominent labellum that is not flared. 'Wizz Fizz', from the Candystriper line, has a moderately-flared labellum. In the fully flared seedlings, 'Jacques Miller'. 'Don Metcalf', 'Shortman', and 'Gus Nossal', the narrow basal part of the labellum gradually broadens to a wide expanse near the apex, with no point, and no or almost no clear demarcation of a forelobe or notch between the forelobe and midlobe. There is no typical midlobe shape in these seedlings, commonly Broadheart, Oval or Spade shaped. 'Shortman' has a very small notch but no demarcated forelobe and midlobe.

Some of the plants with a flared labellum have fine translucent fimbriae on the margins of the midlobe, which is also occasionally seen as projections on the tepals. This has been noted in other advanced examples of linebreeding.

Most *D. kingianum* 'Pale Dragon' x 'Wizz Fizz' flowers are large. 'Pale Dragon' has a large flower, as large as many of the progeny, while 'Wizz Fizz' is smaller, but transmits speckling on the tepals. The diameter of the flared lips is not significantly greater (1:1.25) than is seen in non-flared siblings. The flared or speckled sidelobes and absence of a notch mean that there is a larger area of flattened labellum in the flared flowers, and the area visible is much greater, although the lateral dimensions of the labellums are similar (Table 2). A wide range of colours on tepals and labellums is evident in both flared and non-flared seedlings.

Plants with flared labellums have been crossed to see whether the characteristic will pass onto the next generation. The results are summarised in Table 3. Flared labellums were present in an estimated 10-20% of the crosses where 50 or more seedlings have flowered. This is a higher percentage than first observed in the crossing of 'Pale Dragon' x 'Wizz Fizz'. Presently there is insufficient flowering data available to make any comparisons between the crossings.

The key finding is that *D. kingianum* 'Purple Peon' is in the background of all the plants with flared labellums, and was used up to three times in the breeding lines. It does not have a flared labellum, and earlier generations using it, such as in the Dragon line, did not produce flared labellums. *Dendrobium kingianum* 'Wizz Fizz' is present in about half of the seedlings with flared labellums. So 'Purple Peon' appears to be the main influence in producing the flared labellum. Table 3 shows a wide range of tepal and labellum colours in these seedlings, like the non-flared group.

Table 2. Characteristics of *Dendrobium kingianum* parents in line breeding.

Plant and parentage	Flower diameter mm (across lateral sepals)	Side lobes	Labellum diameter mm	Tepal colour	Labellum
'Pale Dragon' ('Purple Peon' x 'The Monster')	34	high	12.5	splash purple	Wide labellum, candystriped, white and purple
'Wizz Fizz' ('Candystriper x White Ice')	27	high	11	pale mauve striped	Flared, candystriped, white and purple
'Jacques Miller'' ('Pale Dragon' x 'Wizz Fizz')	34	nil*	12	mauve tips, almost white	Flared, candystriped, white and purple
'Don Metcalf' ('Pale Dragon' x ' Wizz Fizz')	32	nil	10	white, mauve tips	Flared, deep mauve purple
'Shortman' ('Pale Dragon' x 'Wizz Fizz')	36	Very small	12	pale mauve stripes	Flared, deep mauve and white stripes and bars
'Gus Nossal' ('Pale Dragon' x 'Wizz Fizz')	33.5	nil*	12	magenta	Flared, deep purple with white bars and white margins
('Pale Dragon' x 'Wizz Fizz') No.1	30	high	11	white with purple stripes	Not flared, candystriped white and purple
('Pale Dragon' x 'Wizz Fizz') No.2	32	high	12	white and splash mauve	Not flared, candytriped white and purple with bars and blotches
('Pale Dragon' x 'Wizz Fizz') No.3	29	high	12.5	splash mauve	Not flared, purple:white 90:10
('Pale Dragon' x 'Wizz Fizz') No.4	30	high	10	splash purple	Not flared

*not conspicuous, little or no notch between the forelobe and midlobe

Fig. 7. *Dendrobium kingianum* - flared labellums - anterior surface. Note lack of notch.

Fig. 8. *Dendrobium kingianum* - flared labellum - side view. Note lack of notch.

Fig. 9. *Dendrobium kingianum* naturals - anterior view. Smaller labellums than linebred plants.

Fig. 10. *Dendrobium kingianum* naturals - side view. Smaller labellums than linebred plants, notch present.

Fig. 11. *Dendrobium kingianum* other line bred plants - anterior view.

Fig. 12. *Dendrobium kingianum* other line bred plants - side view. Notch present.

Photographs (Figures 1–12)

The parents of plants with flared labellums, 'Pale Dragon' (broadheart midlobe) and 'Wizz Fizz' (pointed spade midlobe) have standard labellums (Figs. 4,5). Flared labellums are well demonstrated in three examples of the progeny (Figs. 13–18).

The lateral, side and front-on views of the detached labellums show a range of shapes and colours of the flared labellum type, with fimbriae, and in some cases minor notching (Figs.7,8). In natural and linebred plants the usual features of side lobes, notch and mid lobes are well demonstrated (Figs. 9–12). In the flared labellum group (Figs.7,8), 'Gus Nossal' is at far left and 'Shortman' second from left. 'Jacques Miller' (Fig.1) resembles 'Gus Nossal' except that there is no white margin.

In the natural group (Figs. 9,10), *D. kingianum* 'White Lip' is at left and the others are representatives from different regions from var. *pulcherrimum* in the south to tall plants from southern Queensland. The other linebred plants (Figs. 11,12) include the Dragon series (purple midlobe), other seedlings of 'Pale Dragon' x 'Wizz Fizz', the Candystriper line (with a candy-striped labellum), and some white flowering examples. They all show a typical labellum structure.

Discussion

The flared labellum may perhaps be interpreted as a reversion to a petaloid labellum. Petal-like labellums have rarely been observed in other *Dendrocoryne* e.g., *D. tetragonum* var. *melaleucaphylum*, and *D. speciosum* 'Walrus', but all of the species typically have a forelobe, sidelobes and midlobe. *Dendrobium moorei* from Lord Howe Island has a simple petaloid labellum with no forelobe with sides and no obvious callus but these are not flared and are quite narrow, the other parts of the flower being atypical in appearance for the section. The plants otherwise resemble a small *D. kingianum*. Petaloid labellums are seen in *D. bigibbum* crosses e.g., *D.* Littmans, are prized by some growers, and have received awards.

Table 3. Characteristics of *Dendrobium kingianum* flared labellum progeny.

Named seed;omg	'Purple Peon' no. of times in parentage	'Wizz Fizz' no. of times in parentage	Flower colour	Labellum colour purple:white
'Queens Jewels' ('Purple Peon' x 'Bar Speckler')	1	0	Striped purple, white centre	90:10
'Multiceme' ('Jacques Miller' x 'Best 2009')	2	1	Faint splash purple	50:50 candystripe
'Nicole' ('Jacques Miller' x 'Pale Maid')	2	1	Splash mauve	60:40
'Queens Jewels' x 'Simple Simon'	2	1	Splash purple	80:20
'Ormeau' ('Queens Jewels' x 'Coolstrappa')	1	1	Mainly mauve, striped purple	90:10
'Don Metcalf' x 'Glenmonstrap'	1	1	Splash mauve	90:10
'Shortman' x 'Coolstrappa'	1	1	Striped purple	60:40
'Shortman' x 'Gus Nossal'	2	2	Splash mauve	50:50 candystripe
'Kings Maid' ('Pale Maid' x 'Old King Cole')	2	0	Splash purple	90:10
Ice Cake (Splash Splay x Patacake)	2	1	Splash purple	50:50 candystripe
'Big Lip' ('Coolstrappa' x 'Best 2009')	1	0	Splash mauve	80:20
'Top Shape' x 'Top Late Magenta'	3	0	Splash purple	80:20 Mild flare, late
'Superb Late' x 'Late Purpat'	2	0	Striped splash purple	60:40 Mild flare, late
'Top Strap' x 'Clown'	1	1	Splash mauve striped	60:40 late
'Coolstrappa' x 'Finest 2007'	1	0	Splash purple striped	70:30
'Super Splash' ('Pale Dragon' x ''Superb CS)	1	0	Splash purple	50:50 candystripe

Fig. 13. *D. kingianum* 'Shortman' x 'Gus Nossal'

Fig. 14. *D. kingianum* 'Queens Jewels' x 'Coolstrappa'

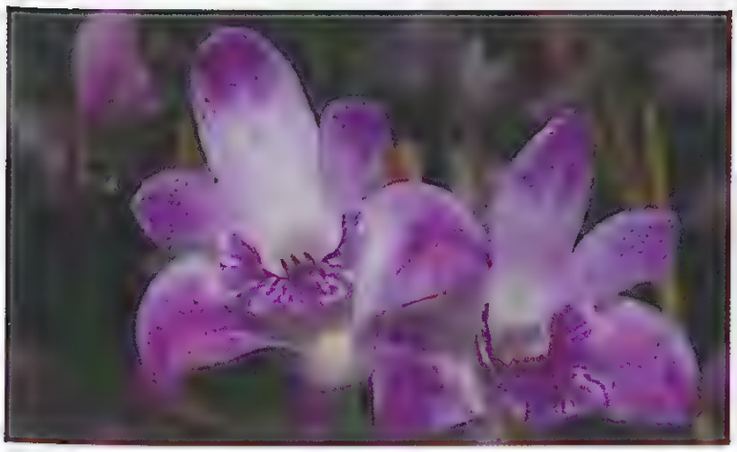

Fig. 15. *D. kingianum* 'Queens Jewels' x 'Simple Simon'

Fig. 16. *D. kingianum* 'Jacques Miller' HCC/AOC 2011

Fig. 17. *D. kingianum* 'Top Strap' x 'Clown'

Fig. 18. *D. kingianum* 'Best' x 'Jacques Miller'

Fig. 19. *D. kingianum* 'Don Metcalf' x 'Glenmonstrap'

Fig. 20. *D. kingianum* 'Don Metcalf'

Origin of the Flared Labellum

All the crosses that produce the flared labellums have Dragons ('Purple Peon' x 'The Monster'), 'Queen's Jewels', 'Jacques Miller' or 'Purple Peon' in the parentage. *Dendrobium kingianum* 'Purple Peon' is the key influence in producing flared labellums and 'Wiz Fizz' may also contribute in some. *Dendrobium kingianum* 'Wizz Fizz' is a cross of 'Candystriper' and 'Iceberg'. *Dendrobium kingianum* 'Iceberg' is a selfing of 'Cream 69', a plant with a fairly narrow labellum that may have a negative influence on producing flared labellums. From my observations, *D. kingianum* 'Candystriper' appears to have a positive effect on flaring. It is not possible to trace back the parentage to naturally occurring plants, as the parentage of 'Purple Peon' is somewhat uncertain. (Adams and Lawson 1995). *Dendrobium kingianum* 'Purple Peon', a seedling purchased from Ken Russell in the early 1980s, is said to be derived from 'Keith Preston' (collected from Dorrigo), 'Open Pink' ('Keith Preston' x 'White Lip'), 'Big Red' (said

to be collected from Middle Brother Mountain) and 'White Lip' (collected from Glenreagh). Plants with flared labellums have been recorded in natural populations in these areas and were used in early breeding in the 1970s and 1980s, with some no longer in cultivation. It appears that flared labellums arose in the breeding using 'Purple Peon' and are a fairly recent emergence in linebreeding.

There is still a way to go to analyse and understand the origin of the flared labellum. It does not appear to be associated with particular colours or labellum shapes. Most importantly, it is associated with quality flowers, e.g., *D. kingianum* 'Jacques Miller' HCC/AOC 2011, 'Queen's Jewels' AM/ANOS 2016 and 'Kings Jewels' AM/ANOS 2018, AM/AOC 2018. A further generation, now in flask, may help to clarify the remaining questions and provide interesting and quality seedlings.

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ANOS Virtual Spring Spectacular New South Wales 2021

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The committee of ANOS Central Coast Group resolved to organise and implement a virtual Spring Spectacular due to the cancellation of shows by ANOS societies because of COVID-19. There were no spring shows in 2020 and it was thought that there should be an opportunity for members of all the ANOS societies in New South Wales to show their plants.

After the success of organising and implementing three ANOS Central Coast Group virtual shows: two in 2020 (Spring Show and *Sarcochilus* Show) and a Spring Show in 2021, it was decided to invite members of societies judged by ANOS New South Wales Regional Judging Panel to participate in a virtual Spring Spectacular. ANOS groups invited included Mid North Coast, Newcastle, Warringah, Macarthur, Sydney, Illawarra and Central Coast.

Organisation of the Show

The dates of the show were Monday 30 August to Sunday 5 September 2021, and it was judged by members of the New South Wales ANOS Regional Judging Panel. Our previous shows had not been formally judged, with class winners and champions determined by popular vote.

The Show Marshal, Carole Barnett, agreed to determine the show schedule and conditions of entry. There were eleven classes for species and eleven for hybrids. For each entry, participants were asked to provide a clear photograph of a single raceme and a clear photograph of the whole plant (clear of any other plant/s). Each entry was labelled clearly with the name of the orchid. Certificates were given for first and second place in each class. First-place in each class progressed for consideration of Champion and Reserve Champion of Show, with prize money of $50 for Champion and $25 for Reserve Champion.

Entrants for the show emailed their entries (a maximum of three entries for each class). After receiving entries Carole entered them into their respective classes to a 'Cloud' spreadsheet, Google Sheets. To facilitate the judging process, she also posted the images in Dropbox. There were two phases to the judging. Firstly, judges were sent the entries and then recorded their preferences for each class. These were collated and the winners of each class were sent back to the judges for voting for the champion awards.

Results

The show was a huge success with 28 exhibitors who exhibited 184 plants. All societies were amongst the first and second place awards. The quality of the orchids was amazing. Each society was sent a copy of all the entries and class winners and all entries on Facebook.

The Grand Champion was awarded to *Dendrobium* Brimbank Gold, grown by Wayne Perrin, a member of ANOS Newcastle Group. Wayne did a remake of the original cross of *D.* Dunokayla x *D.* Cosmic Gold, which was registered by Michael Drobski in 2015. These hybrids are predominantly yellow-gold. The plant was a standout winner. Reserve Champion and winner of Class 12 was awarded to *Dendrobium* Bandon Grove also grown by Wayne Perrin. This hybrid of *D.* Karsun x *D.* Dunokayla was registered by Wayne in 2012.

The full list of winners is shown in Table 1.

The Virtual Show would not have been such a

Table 1. First Place Winners in Virtual Show

Class		Entrant	Plant name
1	*D. speciosum* var. *speciosum*	B. Moore	*D. speciosum* var. *speciosum* 'Purity'
2	*D. speciosum* var. *curvicaule*	D. Cruickshanks	*D. speciosum* var. *curvicaule* 'Kait'
3	*D. speciosum* var. *grandiflorum*	F. Fear	*D. speciosum* var. *grandiflorum* 'Bill's Gold'
4	*D. speciosum* intervarietal	D. Cruickshanks	*D. speciosum* 'No. 2' (var. *pedunculatum* 'Herberton' x *speciosum* 'Empire Bay')
5	*D. speciosum* any other	R. & G. Hurst	*D. speciosum* var. *hillii*
6	*Dendrobium kingianum*	D. Hemmings	*D. kingianum*
7	Other *Dendrobium* sect. *Dendrocoryne* species	D. Hemmings	*D. falcorostrum* 'Denistone Snow'
8	*Dendrobium* sect. *Rhizobium (Dockrillia)* species including Australasian	B. Dobson	*D. teretifolium* var. *fasciculatum* (syn. *D. calamiforme*)
9	*Sarcanthinae* species	T. Gray	*Plectorrhiza tridentata*
10	Any other Australian or Australasian epiphytic species	D. Rajaratnam	*D. purpureum*
11	Terrestrial species	R. Morrison	*Diuris maculata*
12	*Dendrobium* X *delicatum, D.* X *gracillimum, D.* X *suffusum, D.* Ellen & *D.* Bardo Rose	D. Hemmings	*D.* X *gracillimum*
13	*Dendrobium* hybrids with *Phalaenanthe* and/or *Spatulata* parentage	J. Hurst	*D.* Macquarie Spectrum 'Carmen'
14	Other *Dendrobium* hybrids – predominantly yellow/orange	W. Perrin	*D.* Brimbank Gold
15	Other *Dendrobium* hybrids – predominantly any other colour mix	W. Perrin	*D.* Bandon Grove
16	*Dendrobium* Section *Rhizobium (Dockrillia)* hybrids (Australian only)	N. Lee	*D.* Grey Ghost 'Tumbi'
17	*Dendrobium* Section *Rhizobium (Dockrillia)* hybrids (incl. Australasian)	Y. & S. Chan	*D.* Australian Ginger 'Golly'
18	All other Australasian hybrids	Steve Dunstan	*D.* Gowan's Tangello
19	*Sarcochilus* hybrids	Y. & S. Chan	*S.* Bessie

Dendrobium speciosum var. *curvicaule* 'Kait'. Winner Class 2. Photo D. Cruickshanks

Dendrobium Bandon Grove. Reserve Champion. Photo W. Perrin.

Dendrobium Brimbank Gold. Photo W. Perrin.

Dendrobium Brimbank Gold. Grand Champion. Photo W. Perrin.

Dendrobium Bandon Grove. Reserve Champion. Photo W. Perrin.

Dendrobium Macquarie Spectrum 'Carmen'. Winner Class 13. Photo J. Hurst.

Dendrobium tetragonum 'Jess'.

Plectorrhiza tridentata. Winner Class 9. Photo T. Gray.

Dendrobium Australian Ginger 'Golly'. Winner Class 17. Photo Y. and S. Chan.

Dendrobium Gowan's Tangello. Winner Class 18. Photo S. Dunstan.

Dendrobium teretifolium var. *fasciculatum* (syn. *Dendrobium calamiforme*) Winner Class 8. Photo B. Dobson.

Sarcochilus Bessie. Winner Class 19. Photo Y. and S. Chan.

success without the expertise and hard work of Carole Barnett and all societies sincerely thank her.

What Did We Learn

Virtual shows which cover multiple societies can be successfully organised and run and many exhibitors wish to show their plants in a wider forum. There is a place for virtual shows now and a place for them in the future after Covid.

There needs to be input in how to give exhibitors greater skills and expertise in taking photos, particularly with smartphones. A detailed set of instructions is necessary regarding the emailing of entries, incorporating the naming of entries, and the number of entries per email. Describing what constitutes a whole plant and a raceme is a necessity.

Judging of these shows is difficult and complex as well as time-consuming as judges have to toggle in and out of images and come up with a system that works. There is a tremendous workload for the show marshal, particularly if they collate the show.

If virtual shows have a place in the future, ANOS Inc and the ANOS Judging Panel should develop a standard set of guidelines for judging of photographs. Can awards from photographs be considered?

Carole Barnett is a very successful grower having won the Ira Butler Trophy and The Bill Murdoch Trophy. She is the Show Marshal of ANOS Central Coast Group and an Associate ANOS judge.

Gerry Smee is President of ANOS Central Coast and Registrar of Judges, New South Wales Regional Judging Panel.

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